COMBUSTION HEATER

Background of the Invention

Field of the Invention

The present invention relates in general to a combustion heater for converting a fuel to heat energy, and, more specifically, to such heater preheating and finely dividing the fuel source to achieve a reduction in flame length, a higher conversion of fuel to heat energy, and less undesirable emission.

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Description of the Prior Art

Combustion heaters are generally known in the art. The general configuration of such combustion heater includes means for injecting a fuel into a combustion chamber and means for igniting the fuel to produce heat energy. A general drawback of such prior art combustion heaters is a long flame length and an inefficient conversion of fuel to heat energy. The long flame length of prior art combustion heaters necessitates the use of larger boilers to surround the flame to convert circulating water to steam. A larger boiler not only adds to the overall cost of such prior art systems, but also prevents such prior art systems from being used in compact applications.

Additionally, such prior art devices often provide means for spraying fuel as a mist into a combustion chamber to provide more contact between the fuel and an oxidizer, such as ambient oxygen. However, the surface area of the fuel particles is still too large to allow adequate concentration of oxidizer around the fuel to completely combust the fuel. Without an